

Serial No. 10/707,597

6

GEMS 0226 PUS

REMARKS

Claims 1-20 are pending in the above application. The drawings were objected to based on unclear details within Figure 2 due to excessive cross-hatching. Claims 1,2,5-12, and 15-17 were rejected under 35 USC 102(b) as being anticipated by Sell (US 4,082,955). Claims 3,4,13,14,18-20 were rejected under 35 USC 103(a) as being unpatentable over Sell in view of Stock Drive Products 1990s Handbook of Gears.

Amendments to the Drawings.

The Drawings were enlarged and the cross-hatching improved to increase clarity.

Claims 1,2,5-12 and 15-17

Claims 1,2,5-12, and 15-17 were rejected under 35 USC 102(b) as being anticipated by Sell (US 4,082,955). The Applicant respectfully traverses this rejection and requests reconsideration in light of the amendments combined with the following arguments.

It should be noted that the cited elements in the Sell reference do not teach an electromechanical lock as claimed by the present invention. The present invention, as clearly discussed in paragraph 13 of the specification, contemplated a free rotation x-ray source assembly that could be hand positioned in any adjustment and then locked in place using the electromechanical lock. The Sell reference teaches the use of a solenoid to allow movement into 3 locked positions (two horizontal – one vertical) that are predetermined and pre-set. Such a raw adjustment is a configuration adjustment not an aiming adjustment as intended and claimed by the present invention.

Furthermore, the solenoid assembly in the Sell reference is not engaged to the mounting element (to which the x-ray source assembly is rigidly attached) as claimed by the present invention. Instead it is positioned between the drive and the drive shaft. Again, it fails to teach an element with the same purpose as that claimed by the present invention. The Sell reference allows the whole assembly including drive shaft etc to be positioned horizontally or vertically. The present invention, by using an electro lock between the source mount and the rotational shaft allows for hand adjustment of the source x-ray direction without use of the drive shaft.

With special regard to the Examiner's assertion that Sell teaches a source positioning shaft and feedback device (referenced as col 8, lines 51-58) the Applicant respectfully

Serial No. 10/707,597

7

GEMS 0226 PUS

traverses this assertion. The passage cited fails to teach the claimed structure. The present invention claims a x-ray source that can be disengaged and freely rotated to aim. Then engaged and linked to a motorized shaft in this relative rotational position. The claimed source positioning shaft and feedback device allow for an exact orientation to be calculated after free rotation. The Sell reference does not contemplate such free adjustment rotation and additionally fails, therefore, to teach the use of the claimed elements to determine the relative rotational position. Henceforth why a claimed element such as an optical encoder capable of minute adjustment measurements is claimed rather than a simple switch. The Sell reference teaches ONLY control and determination of source position when engaged. The optical reference mentioned in VIII is not an optical encoder as claimed to track position in free rotation, but a photocell to start and stop the source x-ray production (see column 21, line 30-35). This is not the same as the claimed element and fails to even contemplate or teach the claimed function.

The Applicant respectfully requests reconsideration in light of these enumerated differences and clarified amendments.

Claims 3,4,13,14,18-20

Claims 3,4,13,14,18-20 were rejected under 35 USC 103(a) as being unpatentable over Sell in view of Stock Drive Products 1990s Handbook of Gears. The Applicant respectfully traverses these rejections. First based on the underlying failures of the Sell reference. Second, on the basis that SDP and Sell either alone or in combination teach the limitations of the present invention.

Especially traversable is the assertion that is the Examiner's assertion that: "it is implicit from the spring action of the electromechanical lock that the back force drive of the gear assembly is greater than the locking force". This is simply not true. The solenoid and spring in Sell are NOT the lock. They control movement of the lock. They move the locking tab 188 in and out of slots 180,181, or 182. The only way for this locking force to be less than the back force drive of the gear assembly as implied is if the shearing force of the tab 188 is less than the back drive force. This is not even logical. The locking force is what is claimed. The advantage is that the claimed electromechanical lock will break free prior to the back drive force. The Sell reference would have to self destruct for this to be possible. That is why the lock in the claimed invention is illustrated as a frictional electromagnetic one without pins etc as shown in Figure 2. This allows infinite adjustment by hand, in addition to

Serial No. 10/707,597

8

GEMS 0226 PUS

a controllable locking force less than the back drive force.

The Applicant respectfully traverses all the assertion regarding the obviousness of combining worm gear in relation to locking force. Again, the locking force in Sell is NOT the force of the spring. The spring does nothing more than bias the solenoid arm used to move the latch. The Applicant, therefore, respectfully requests reconsideration..

Serial No. 10/707,597

9

GEMS 0226 PUS

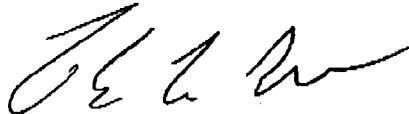
CONCLUSION

The Applicant would like to thank the Examiner for his assistance. In light of the above amendments and remarks, Applicant submits that all objections and rejections are now overcome. Applicant has added no new material to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited.

Should the Examiner have any questions or comments that would place the application in better condition for allowance, the Examiner is respectfully requested to call the undersigned attorney.

The Commissioner is authorized to charge any fees due to Deposit Account No. 50-0476.

Respectfully submitted,



Thomas Donohue
Reg. No. 44,660
Artz & Artz, P.C.
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500
(248) 223-9522 (Fax)

Dated: July 5, 2005